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Narcissism, Social Encounters, and Emotions in Late Life

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Abstract

Narcissism, Social Encounters, and Emotions in Late Life

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Narcissism may have implications on older adults' daily emotional experiences and such associations may be explained by daily social activities. To examine these links, this study analyzed data from the *Daily Experiences and Well-being Study* which included older adults aged between 65 to 92 years. Participants (n = 304) rated their levels of narcissism and reported their daily emotional and social experiences. Findings showed that older adults who scored higher on narcissism also felt prouder throughout the day, whereas narcissism did not predict loneliness or irritation. Additionally, the multilevel structural equation mediating model suggested that people reported higher levels of pride after social encounters, but narcissism did not predict the number of social encounters. As such, results showed that social encounters did not mediate the association between narcissism and pride. The findings reflect the effect of narcissism on older adults' emotional and social experiences. Practically, as older adults may experience more cognitive and physical declines, being narcissistic may protect them from such losses and help maintain self-efficacy. In addition, the results pertain to social encounters,

loneliness, and irritation indicate that personality traits may not necessarily be manifested in daily life, highlighting the importance of utilizing ecological measurements.

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NARCISSISM, SOCIAL ENCOUNTERS, AND EMOTIONS IN LATE LIFE

Narcissism is a personality trait that involves self-centeredness and aggrandizement (Miller et al., 2017; Raskin & Terry, 1988). People who are more narcissistic may lack the ability to understand other people's feelings and to take other people's perspective (Hepper et al., 2014). Indeed, initiating and maintaining social relationships requires investment and sensitivity to the other person's needs. Moreover, people who score higher on narcissism also tend to be more aggressive during social encounters (Bushman & Baumeister, 1998; Twenge & Campbell, 2003) and less likely to experience a sense of commitment to social partners. Rather, they may exploit their social partners to boost their own esteem (Campbell & Foster, 2002; Foster et al., 2009; Krizan & Bushman, 2011). Taken together, research suggests that people who are higher on narcissism have poorer social relationship quality compared to those who are lower on narcissism (Keller et al., 2014; Skues et al., 2012). These issues may be particularly problematic in late life, when the importance of social partners increases (Charles & Carstensen, 2010; Chen & Feeley, 2014).

Likewise, people with narcissistic tendencies may experience patterns of emotions consistent with the focus on the self, such as increased pride and irritation (Czarna et al., 2018; Keller et al., 2014). This pattern of emotions may disrupt social relationships in late life, when social relationship quality typically improves (Charles & Carstensen, 2010; Huo et al., 2020). As such, in late adulthood, interpersonal difficulties associated with narcissism may have a larger negative effect on older adult's lives than would be the case for younger adults (Birditt et al., 2020).

Previous studies demonstrated narcissism's active role in shaping individual's self-perception, social experiences, and emotional experiences among younger people (Holtzman et al., 2010; Morf & Rhodewalt, 2001). Yet, there has been little attention to the personality trait of narcissism in late life. This study used daily reports to examine the concurrent association between narcissism, social encounters, and emotions.

It is important to note differences in definitions of narcissism between the clinical literature and the social psychology literature (Cain et al., 2008). In clinical settings, Narcissistic Personality Disorder is a pathological constellation of traits characterized by impairments in interpersonal and self-functioning (American Psychiatric Association, 2013). In contrast, from a social psychology perspective, narcissism is a personality trait which is associated with grandiosity, entitlement, empathic difficulties, and positive self-concepts along a continuum, rather than a discrete cut off for a disorder (Raskin & Terry, 1998). That is, narcissistic personality trait reflects inflated self-views among non-clinical populations. This study takes the social psychology perspective of narcissism and aims to capture the level of inflated self-views across a wide range of older adults.

NARCISSISM IN LATE LIFE

The degree of narcissism may vary throughout life, partly as a function of variability in the developmental tasks regarding the self and identity. Social investment theory posits that individuals are motivated to invest in age-graded roles (e.g., work, parenthood) which provide foundation for the growth of self-identities and personality change (Wood & Roberts, 2006). Typically, narcissism mounts in adolescence when individuals are forming self-identity, becoming more independent and more self-focused (Syed & Seiffge-Krenke, 2013). Conversely, as adults grow older, they need to deal with more complex relationships and bond with others (e.g., family, friends) more closely. As

a result, focusing on the self may no longer be adaptive (Wetzel et al., 2019). Consistent with the theory, longitudinal studies tracking participants over sixty years found that the level of narcissism increases in adolescence and declines in late life (Chopik & Grimm, 2019; Carlson & Gjerde, 2009). As such, older adults who score higher on narcissism may display distinct social and emotional patterns.

NARCISSISM AND SOCIAL ENCOUNTERS

The trend in declining level of narcissism in later life underlies the important role that narcissism may play for older adults. As narcissism is less prevalent in the older population, those who are still higher in narcissism may represent a particularly vulnerable group. It is likely that older adults who are higher in narcissism have a more consistent feeling of self-importance based on a lifetime of reinforcing these beliefs, and the negative effects of narcissism on social connections and relationships may be more salient for them due to maladaptive social skills.

Narcissism may have an impact on the frequency of social encounters. It is likely that people who score higher on narcissism have more social encounters than individuals who score lower on narcissism because they crave opportunities to show off and boost self-esteem (Grapsas et al., 2020). According to the self-regulatory processing model (Morf & Rhodewalt, 2001), narcissistic individuals actively seek external self-affirmation in the social arena. That is, to find an audience for their self-promotion behaviors, individuals who score higher on narcissism need more social encounters than their less narcissistic counterparts. Some empirical studies have documented this link. A study asked college students to carry a digital audio recorder which recorded surrounding sound 30 seconds every 12.5 minutes. Those recordings revealed that narcissistic people were more likely to engage in social activities throughout the day (Holtzman et al., 2010).

Likewise, in a cross-cultural study, participants from Germany, Austria, and Switzerland who scored higher on narcissistic admiration, characterized by constantly promoting positive self-view and striving for uniqueness, reported a lower score on the preference for being alone (Back et al., 2013; Fatfouta, 2017), indicating they would prefer to be in another person's presence. There is a paucity of work on the association between narcissism and social encounters among older adults, and this study aims to examine this important yet unstudied association.

NARCISSISM AND EMOTIONAL EXPERIENCES

The Direct Effect of Narcissism

Narcissism may shape individuals' emotional experiences due to the need for self-validation and aggrandizement. The current study focuses on three emotions (i.e., pride, loneliness, irritation) which represent different facets of a core feature of narcissism, the positive self-concept (Raskin & Terry, 1988). Pride is a self-conscious emotion which represents the consequence of positive self-evaluation (Lewis, 2008). Individuals who score higher on narcissism have rosy self-images and are likely to evaluate themselves in an overly positive manner (Nicholls & Stukas, 2011). An empirical study found that younger adults who scored higher on narcissism also scored higher on hubristic pride (i.e., arrogant, smug), a form of pride characterizing self-aggrandizement unrelated to actual achievements (Rogoza et al., 2018a; Tracy et al., 2009). Similarly, a study using online surveys also reported positive association between narcissism and overconfidence which is a state similar to hubristic pride as individuals view themselves more positive than reality (Macenczak et al., 2016). However, it is not clear whether this pattern carries over into late life, when achievement-oriented goals may be less salient (Ebner et al., 2006; Senko & Freund, 2015).

Likewise, loneliness is an emotional state elicited by subjective perception of deficient social connections (National Academies of Sciences, Engineering, and Medicine, 2020). Loneliness is associated with narcissism because individuals who have contemptuous views of others are unlikely to admit they need other people's company and thus, unlikely to feel lonely (Zhang et al., 2015). A study found that older adults scored higher on loneliness than younger people, but this effect was less significant for older adults who were higher on narcissism, indicating the protective effect of narcissism over loneliness (Carter & Douglass, 2018). Likewise, college students who were higher on narcissism also scored lower on state loneliness (Sedikides et al., 2004), which demonstrated the negative association between narcissism and loneliness.

Finally, irritation is a feeling of annoyance and impatience (Aaker & Bruzzone, 1985) which may function as an armor to protect individual's positive self-concept. That is, people higher in narcissism may view social partners as potential threats and thus be irritated when other people's behavior challenges their dominant social position (Czarna et al., 2018; Ronningstam, 2011). Irritation was also linked to aggression in younger age groups and people who are higher in narcissism demonstrated a higher tendency for aggression (Bushman & Anderson, 2002). For example, a study found children who scored higher on narcissism were also reported to be more aggressive by parents and teachers (Barry et al., 2007). Similarly, college students who scored higher on narcissism engaged in more aggressive behavior when completing a competitive task with their romantic partner (Keller et al., 2014), suggesting a link between higher narcissism and higher tendency of irritation and aggression. Using participants aged from 18 to 40, a study assessed individual's states of anger twice with a one-week gap and found narcissism associating with a higher average level of anger (Maciantowicz & Zajenkowski, 2020). In spite of this evidence, it is not clear whether older adults who

score higher in narcissism also experience greater irritation when with their social partners.

Prior studies of narcissism and emotional experiences have asked about emotions over longer periods of time, such as weeks or months (Rogoza et al., 2018a; Zhang et al., 2015). But social encounters and emotions occur in the moment, throughout the day. More importantly, narcissistic individual's emotions are more susceptible to the surrounding environment (Geukes et al., 2017; Rhodewalt et al., 1998), which means their emotions are contingent with social events. As such, the current study focuses on the link between narcissism and these emotions in a short time interval, to investigate how daily social and emotional experiences may be intertwined with narcissism.

The Mediating Role of Social Encounters

Considering the vital role social encounters play in older adult's emotions and well-being (Mejía & Hooker, 2015; Rook, 2015; Siedlecki et al., 2014), social encounters could serve as the mechanism through which narcissism influences emotions. In terms of pride, according to the Status Pursuit in Narcissism (SPIN) model, social encounters are important for narcissistic people to show off in front of the audience and thus boost self-esteem as well as generating a sense of pride (Grapsas et al., 2020). With regard to loneliness, people who are high in narcissism pin their hopes on social contacts to achieve the desired dominant status (Back, 2020). Meanwhile, as the number of social encounters increase, individuals may feel less lonely because they are surrounded by social partners who give them a window to share their feelings and experiences (De Jong Gierveld et al., 2006). On the other hand, although social encounters are associated with various positive outcomes (Mejía & Hooker, 2015), it may also potentially bring negative emotions (Rock, 2015). As such, negative social experiences like being rejected or ignored may

evoke irritation (Molden et al., 2009). As such, it is possible that more social encounters could explain the effect of narcissism on irritation.

Other Factors Associated with Social and Emotional Experiences

I controlled for age, gender, marital status, education, race and ethnicity, and health status in all models. Age is negatively associated with the social network size (Cornwell, Laumann, & Schumm, 2008) and older people usually have a greater sense of loneliness as age increases (Dykstra et al., 2005; National Academies of Sciences, Engineering, and Medicine, 2020). Compared to men, women report less narcissism (Grijalva et al., 2015) less pride (Grijalva et al., 2015) as well as more loneliness (Prieto-Flores et al., 2011) and more social encounters (Kalmijn, 2003). Married older adults have greater social network size (Cornwell, Laumann, & Schumm, 2008) and they are less likely to feel lonely compared to their unmarried counterparts (Cacioppo et al., 2006). Regarding education, higher education level is associated with better mood and more social contacts (Fang et al., 2018). Compared to non-Hispanic White adults, African American adults have a smaller social network size but more frequent social contacts with their network members (Ajrouch, Antonucci, & Janevic, 2001). Better health status is associated with more contact with others (Cornwell & Waite, 2009) and better mood (Penedo & Dahn, 2005). Finally, considering the effect of social network size on social encounters and emotions (Cornwell & Waite, 2012), we also controlled for the number of close social partners that participants reported.

Study Objectives

Using daily reports from the Daily Experiences and Well-Being Study (DEWS), the present study examined the effect of narcissistic personality trait on

emotional experiences and the possible effects of social encounters on these emotions. We tested the following hypotheses: First, older adults who scored higher on narcissism would report a higher level of pride and irritation, and a lower level of loneliness throughout the day, compared to older adults who scored lower on narcissism. Second, older adults who scored higher on narcissism would report more social encounters throughout the day. Finally, the number of social encounters would account for the association between narcissism and emotional experiences. That is, social encounters would mediate the association between narcissism and each emotion (i.e., pride, loneliness, and irritation) as illustrated in figure 1.

Methods

PARTICIPANTS AND PROCEDURE

Participants were from the Daily Experiences and Well-being Study (DEWS) conducted in 2016-2017. The study included 333 older adults aged 65 to 92 who were recruited from the greater Austin area, Texas. Participants first completed a face-to-face baseline interview including information about social partners and background information (e.g., gender, age, education) which lasted between 90 to 120 minutes. The interview was followed by a 5-6 days (M = 5.33, SD = 1.06) ecological momentary assessment (EMA) during which participants reported their daily experiences and mood on mobile devices every 3 hours during waking hours. Finally, participants completed a survey (aka "leave behind questionnaire," LBQ) in their homes in which narcissism was measured. Participants received $50 for completing the baseline survey and $100 for completing the EMA component and LBQ.

Among the 333 participants taking part in the baseline interview, 304 participants (aged 65–89, M = 73.88, SD = 6.32) completed both the EMA and the leave behind

questionnaire. Compared to the 29 older adults who did not participate in the full process, the 304 participants reported themselves to be healthier ($t(331) = 3.23$, $p = .001$) and have a larger social network size ($t(331) = 1.99$, $p = .047$). They were also less likely to be ethnic or racial minorities ($\chi 2(1, N = 333) = 18.94$, $p < .001$) but no significant differences were found in other background characteristics. Eighteen of the excluded participants completed the measure of narcissism but were not eligible for this study because they did not participate in the EMA. Their levels of narcissism do not differ significantly from the eligible participants. Table 1 describes the demographic characteristics of the 304 eligible participants. Supplementary Table 1 summarizes the descriptive statistics, the *t* test, and the chi-squared test results between the 304 participants and the other 29 participants who did not complete the whole study.

MEASURES

Baseline Interview Measures

Narcissism

I measured narcissism using the shortened version of Narcissism Personality Inventory (NPI-16; Ames et al., 2006). Participants chose between a narcissism-consistent or narcissism-inconsistent statement on 16 items (e.g., I really like to be the center of attention vs. It makes me uncomfortable to be the center of attention). For each item, participants scored 1 point for choosing the narcissism-consistent statement and received 0 points if choosing the narcissism-inconsistent statement. There are 6 missing reports for each item on average ($SD = 3.04$, range = 3–12) which comprised 2% of the total sample. Because the amount of missing value did not have a potentially substantial influence on narcissism score, I calculated the average points across all items as the

narcissism score regardless of whether the participant had missing values. The average point represents the proportion of items for which participants chose the narcissism-consistent statement (α = .74). Although the Kuder–Richardson Formula 20 (KR-20; Kuder & Richardson, 1937) is suggested to use for dichotomous items, it actually yields the same result as the Cronbach Alpha (Cho, 2016). Therefore, I reported the Cronbach Alpha as a measure of reliability for the Narcissism Personality Inventory.

NPI-16 selected items from the original 40-item NPI (Raskin & Hall, 1981) with an aim to cover various aspects of narcissism (i.e., exploitativeness, leadership, superiority, and self-absorption; Emmons, 1984), yet no factor analysis has been conducted to generate different facets in the shortened version NPI. As such, I used NPI-16 score as a composite score representing an individual's level of narcissism, instead of dividing it into different aspects of narcissism. The complete NPI-16 is in Appendix A.

Social Partners

Participants named close members of their social networks using the social convoy circles (Antonucci, 1986; Fuller et al., 2020). This measure is widely used (Birditt et al., 2019; Lay et al., 2019), and asks participants to diagram people who are close and important in their lives; the measure uses three concentric circles, but I focused on placement in the convoy measure as an indicator that the ties were subjectively defined as close and important. On average, participants reported 15.26 social partners in the concentric circles (*SD* = 6.97, range = 0–30). I transferred the top 10 closest social partners to the Ecological Momentary Assessments to assess contact with the closest social partners throughout the day.

Participant Characteristics. Participants reported their age in years. I coded gender as 1 (male) and 0 (female). Participants indicated their education level and I recoded it

into 1 (high school or less), 2 (some college school), and 3 (college or more) and generated dummy variables for further analysis. Participants reported their marital status as married, cohabitating/living with a partner, divorced, separated, widowed, and never married. Marital status was dichotomized as 1 (married or cohabitating) and 0 (not married). Self-reported physical health was rated as 1 (excellent), 2 (very good), 3 (good), 4 (fair), and 5 (poor; Idler & Kasl, 1995) and I reverse coded the health condition so a higher score represents better health condition. Participants indicated their race as White, Black or African American, Asian, American Indian/Alaska Native, native Hawaiian/other pacific islander. In another question, they also indicated the ethnicity as Hispanic/Latino and not Hispanic/Latino. I dichotomized minority status as 1 (ethnic or racial minorities) and 0 (non-Hispanic Whites) based on participants' ethnic and racial identities.

Ecological Momentary Assessment (EMA) Measures

Encounters with Social Partners

From the social convoy circles described previously, we transferred the top 10 names to the handheld device for the EMA assessment. Every 3 hours throughout the day, participants indicated whether they had contact with each of the 10 closest social partners since the prior measurement as 1 (yes) and 0 (no). They also indicated whether they had contact with anyone else up to 6 persons (i.e. non-close social partners) during the prior 3 hours as 1 (yes) and 0 (no). I generated a variable indicating how many social partners in total the participant encountered during the 3-hour interval.

Mood

Every 3 hours throughout the day, participants rated to what extent they felt four positive (e.g., proud, calm) and five negative (e.g., irritated, sad) emotions on a scale from 1 (not at all) to 5 (a great deal). Most of the items were selected from a list of prototypical emotion features (Shaver et al., 1987) and adapted to a five-point scale from the original four-point scale. Two items (nervous/worried, proud) were retrieved from the Positive and Negative Affect Schedule (PANAS; Watson, Clark, & Tellegen, 1988). In the current study, I used the ratings of being proud, lonely, and irritated, which are related to narcissism and social contacts in particular. I also conducted sensitivity analyses using the overall positive and the overall negative emotion scales.

Analytic Strategy

First, to examine the descriptive and bivariate statistics, I took (a) participants' average numbers of social partners they encountered in each assessment and (b) participants' average scores of pride, loneliness, and irritation they reported in each assessment. Data were aggregated at the participant level only for descriptive statistics and bivariate associations between narcissism score, emotional experiences, and the number of social encounters (Table 1).

Hypothesis testing occurred at the 3 hour assessment level. Following the initial step, I estimated multilevel regression models and multilevel structural equation mediating models to test the hypotheses. All continuous covariates were centered at the grand mean for a better interpretation of the intercept. All models were adjusted for participant age, gender, marital status, minority status, education, health, and social network size (number of social partners named as social convoy).

Hypothesis 1 pertained to associations between narcissism and emotional experiences, I examined whether older adults who scored higher on narcissism reported a higher level of pride, irritation, and a lower level of loneliness across the study days. Because of the nested data, I estimated two-level models in which assessments nested within participants. I considered three-level models (assessments nested within days, which nested within participants) but used the two-level model because emotional experiences did not vary on the day level (i.e., emotional patterns were consistent across days). The model was performed using SAS PROC MIXED (SAS Institute, 2013). The predictor was participants' narcissism scores. Pride, loneliness, and irritation which were assessed at each 3-hour interval were outcomes in three separate models. The models allowed random intercepts and fixed slopes for the effect of narcissism because likelihood ratio test did not suggest allowing random slopes significantly improved model fits. In the two-level model equation below, t refers to level 1 (assessment level) and i represents level 2 (participant level). The equation below used pride as an example, and loneliness as well as irritation followed the same equation.

$$\begin{aligned} Pride_{ti} = {} & \beta_{00} + \beta_{01}Narcissism_{0i} + \beta_{02}Male_{0i} + \beta_{03}Age_{0i} + \beta_{04}Married_{0i} \\ & + \beta_{05}Minority_{0i} + \beta_{06}Health_{0i} + \beta_{07}Some\ college_{0i} \\ & + \beta_{08}College\ or\ more_{0i} + \beta_{09}Social\ network\ size_{0i} + d_{0i} + u_{ti} \end{aligned}$$

In the equation, β_{00} represents the sample average of pride and β_{01} is the slope of narcissism's effect on pride. β_{02} to β_{09} stands for the effect of covariates respectively. d_{0i} is the random intercept allowing individual differences on the average level of pride. Finally, u_{ti} is the error term on the assessment level.

Next, I tested whether older adults who scored higher on narcissism had more social encounters throughout the day (hypothesis 2). I estimated a two-level model in which assessments were nested within participants. As for the same reason in the

previous model, I retained using the two-level model for parsimonious reasons using SAS PROC MIXED (SAS Institute, 2013). The outcome was the number of social partners whom participants encountered in the prior 3 hours. By including a random intercept and a random slope, the model allowed narcissism to have distinct effects on each individual's social experiences. The predictor in the model was participants' narcissism scores. I used the equation below to estimate narcissism's effect on the number of social encounters.

$$
\begin{aligned}
&Social\ encounter_{ti} \\
&\quad = \beta_{00} + \beta_{01}Narcissism_{0i} + \beta_{02}Male_{0i} + \beta_{03}Age_{0i} + \beta_{04}Married_{0i} \\
&\quad + \beta_{05}Minority_{0i} + \beta_{06}Health_{0i} + \beta_{07}Some\ college_{0i} \\
&\quad + \beta_{08}College\ or\ more_{0i} + \beta_{09}Social\ network\ size_{0i} + d_{0i} \\
&\quad + d_{1i}Narcissism_{0i} + u_{ti}
\end{aligned}
$$

In this equation, β_{00} is the participants' average number of social encounters. β_{01} represents narcissism's main effect on social encounters. β_{02} to β_{09} stands for the effect of covariates respectively. d_{0i} is the random intercept and d_{1i} is the random slope allowing individual differences on the slope of narcissism's main effect. u_{ti} is the error term on the assessment level.

Finally, to test hypothesis 3 regarding the mediation role of social encounters in the association between narcissism and emotions, I used Mplus 8 to estimate two-level structural equation mediating models (MSEM) which separated the effect on within-person and between-person level (Muthén & Muthén, 2017; Preacher et al., 2010). On the within-person level, the model controlled the effect of social encounters on emotional experiences. On the between-person level, the model estimated the effect of (a) narcissism on social encounters, (b) social encounters on emotions, and (c) the direct effect of narcissism on emotional experiences. The indirect effect of narcissism on

emotional experiences through social encounters was calculated based on the between-person level results, and the model also controlled for the within-person level effect of social encounters on emotions.

Results

I first examined participant's average score on pride, loneliness, and irritation, as well as the average number of encountered social partners throughout the day (Table 1). On average, participants scored 0.20 out of 1 on narcissism (*SD* = 0.17), and they received an average score of 2.43 out of 5 on pride (*SD* = 1.19), 1.16 out of 5 on loneliness (*SD* = 0.35), and 1.26 out of 5 on irritation (*SD* = 0.32). Participants reported that they have social encounters among 89% of the assessments and they encountered 2.84 (*SD* = 1.38) social partners in each assessment on average, during the study days.

I considered whether there were bivariate associations between narcissism, emotional experiences, and social encounters. Indeed, higher narcissism scores were associated with higher levels of pride with a small to moderate effect size ($r(302) = .12$, $p = .04$), and more social encounters were associated with a greater extent of pride ($r(302) = .14$, $p = .02$) and irritation ($r(302) = .16$, $p = .01$). Bivariate associations between predictors, emotions, social encounters, and covariates were reported in Supplementary Table 2.

Effects of Narcissism on Emotional and Social Experiences

The initial hypothesis pertains to the associations between narcissism and emotional experiences. I hypothesized that compared to individuals who scored lower on narcissism, individuals who scored higher on narcissism would report more pride, irritation, and less loneliness throughout the day. As expected, two-level multilevel

models revealed that older adults with higher narcissism scores felt prouder throughout the day (B = 1.01, p = .01), yet the expected associations were not found for irritation and loneliness (Table 2).

Regarding the association between narcissism and social experiences, I predicted that older adults who scored higher on narcissism would have more social encounters throughout the day compared to those who scored lower on narcissism. However, the results did not support this hypothesis. No significant associations were found between narcissism score and the number of social encounters (Table 3).

THE MEDIATING ROLE OF SOCIAL ENCOUNTERS

The final research question asked whether the number of social encounters could explain the link between narcissism and emotional experiences. Although narcissism did not significantly predict the number of social encounters, loneliness, and irritation, a methodological paper suggested that a mediation model is still possible under this circumstance (MacKinnon & Fairchild, 2009). As such, the study tested the mediation models for narcissism, social encounters, as well as pride, loneliness, and irritation respectively, using two-level path analyses in which narcissism was the predictor.

The model revealed that higher narcissism was associated with more pride directly (B = 0.95, p = .02) and more social encounters were associated with more pride on the within-person level (B = 0.04, p < .001) whereas the effect was not significant on the between-person level (B = 0.00, p = .97; Table 4).

In other words, older adults reported higher pride when they had social encounters in the prior 3 hours, in comparison of when they were alone. However, those who had more social encounters on average were not prouder than their counterparts who encountered fewer social partners. Contrary to my hypothesis, I did not observe social

encounter mediated the association between narcissism and pride (B = 0.00, p = .97). Figure 2 delineates the model.

Likewise, the mediation model for loneliness appeared a similar pattern with pride in which the within-person level effect of social encounters on loneliness was significant (B = -0.01, p = .001). That is, an individual felt less lonely if he/she had more social encounters than usual during the prior 3 hours. However, narcissism was not associated with either a lower level of loneliness (B = 0.07, p = .55) or more social encounters in general (B = 0.76, p = .19). In contrast to the models of pride and loneliness, no significant associations were reported for irritation. Results for the three mediation models were summarized in Table 4.

SENSITIVITY TESTS

Married older adults had social encounters with their spouse among 84% of their assessments on average. Having a spouse offers access to more frequent social encounters, which may mask the effect of narcissism on the number of social encounters. Given the prominence of spousal contacts regarding individual's daily life, I also estimated sensitivity tests using the number of social partners the participant encountered in the prior 3 hours excluding the spouse. Narcissism did not predict the number of non-spouse social encounters either (Supplementary Table 3).

Finally, we repeated the analyses using the overall positive and negative emotional scales at each 3-hour assessment as the outcomes. Narcissism was not associated with the overall emotional scale scores (Supplementary Table 4) and I did not pursue these scale scores further.

Discussion

Narcissism has been linked to poorer well-being and physical health (Czarna et al., 2018; Sedikides et al., 2004), yet few studies have examined the concurrent association between narcissism and emotions throughout the day. The SPIN model suggests that narcissistic individuals may generate a greater sense of achievement from social encounters, which then translates into more positive and less negative emotions (Grapsas et al., 2020). The current study aimed to examine this model among community-dwelling older adults and found that older adults who scored higher on narcissism felt prouder than those who score lower on narcissism throughout the day. Using social and emotional information reported every 3 hours, the current study also confirmed the association between social encounters and emotions in the moment (Litwin & Shiovitz-Ezra, 2011).

Influence of Narcissism on Emotions

In line with previous studies which suggested that individuals who scored higher on narcissism also scored higher on pride (Rogoza et al., 2018a), this study found a positive association between narcissism and pride in an older population. Although as growing older, people tend to have a lower level of narcissism in general (Chopik & Grimm, 2019), those older adults who score higher on narcissism retain a positive self-perception and thus feel prouder throughout the day than their counterparts who score lower on narcissism.

Furthermore, this finding is in tune with prior studies that associated narcissism with positive emotions and better psychological well-being (Sedikides et al., 2004). Narcissism has been regarded as a problematic personality trait as it may trigger conflicts and hurt social relationships (Keller et al., 2014; Krizan & Bushman, 2011), however, the

association between narcissism and positive emotions highlights the protective effects of narcissism on older adult's emotional well-being. Considering older adult's downward trajectory of cognitive and physical development, being narcissistic may help them navigate possible unpleasant life events and maintain a relatively high level of self-efficacy which is beneficial for older adult's physical health (Assari, 2017; McAuley et al., 2006).

Based on the literature, I expected to find differences in older adults' reports of irritation and loneliness as a function of their level of narcissism. However, results did not support such associations. The current study showed narcissism's effect on positive emotions (i.e., pride) but not negative emotions (i.e., loneliness, irritation), which may reflect older adult's emotional regulation process. That is, in later adulthood, individuals shift their goals to emotional aspects from knowledge acquisition and personal development to seeking positive emotional experiences (Charles & Carstensen, 2010). As a result, regardless of narcissism level, older adults may be able to regulate emotions better and resolve those irritating experiences which negatively affect younger people.

Additionally, other factors may influence older adult's irritation and loneliness respectively. For narcissistic individuals, being irritated is a protective strategy to combat experiences that threaten self-concepts (e.g., harsh criticism; Lambe et al., 2018), whereas in late life, individuals may face fewer ego threats in daily social interactions as they have left the workplace (Bianchi & Milkie, 2010). As such, there is no need for narcissistic older adults to be irritated to protect themselves due to the lack of ego threat. Furthermore, regarding loneliness, it is possible that older adult's loneliness hinges heavily on a variety of factors (e.g., social network, physical health, cognitive ability) rather than personality traits (National Academies of Sciences, 2020).

HOW NARCISSISM INFLUENCES EMOTIONS

Possible Mechanisms for the Association between Narcissism and Pride

In contrast to previous studies which have found associations between narcissism and the frequency of social encounters (Holtzman et al., 2010), narcissism did not predict social encounters in the current sample. Due to the lack of association between narcissism and social encounters, although the study confirmed the positive influence of narcissism on pride, the mechanism under this effect is not clear.

I initially hypothesized that social encounters would account for the association, whereas results did not support the hypothesis. Instead of creating social encounters, narcissistic older adults may adopt other strategies in order to achieve a higher social status. For example, narcissistic people have a higher motivation to outperform other people and they showed greater capacity on skill tasks before an audience (Wallace & Baumeister, 2002), indicating that for narcissistic people, how they perform during encounters is probably more important than the number of encounters.

Furthermore, based on the status pursuit in narcissism (SPIN) model, narcissistic individuals may adjust the appraisal system and evaluate their experiences with bias (e.g., attribute successes to themselves and failures to other people; Grapsas et al., 2020). Thus, even if they cannot surpass the achievement of other people, such an appraisal process still gives narcissistic people positive feelings about themselves (Dufner et al., 2019). This hypothesis is in line with the selection, optimization, and compensation (SOC) model of aging which suggests that older people are inclined to optimize available resources instead of exploiting new resources (Baltes & Baltes, 1993; Freund, 2008). In the context of narcissism, the appraisal process may be more important for older adults who score higher on narcissism than actual social encounters.

Significance of Social Encounters in Late Life

The study expanded current studies by demonstrating the concurrent association between social encounters and emotions in late life. In other words, social encounters may generate specific emotional responses at the time those encounters occur. In accordance with the hypothesis, older adults reported feeling less lonely if they encountered other people in the prior 3 hours, which is not surprising give evidence that social partner mitigate the subjective feeling of loneliness (Courtin & Knapp, 2017; De Jong Gierveld et al., 2006). Moreover, older adults felt prouder if they had social encounters in the prior 3 hours, compared to times when they were alone. Taken together, these findings are consistent with existing studies on the association between social encounters and emotional well-being for older people (Litwin & Shiovitz-Ezra, 2011).

LIMITATIONS AND CONCLUSIONS

One of the limitations is that the sample was more highly educated than the general United States population, although it cast people with the full range of education levels. Considering the positive bivariate association between narcissism and education (Meier & Semmer, 2013), it is likely that the distribution of narcissism may not be the same in another sample with different education level and thus lead to disparate influences on daily social and emotional experiences.

Another limitation is that this study did not make clear distinction between different dimensions of narcissism. For example, grandiose narcissism is characterized by aggressiveness and power orientation whereas vulnerable narcissism reflects the incompetent, defensive, and anxious side of narcissism (Krizan, Z., & Herlache, 2018; Wink, 1991). Considering recent findings regarding the divergent associations between grandiose, vulnerable narcissism and social as well as emotional experiences (e.g.,

vulnerable narcissism is more closely related to negative emotions; Rogoza et al., 2018b), the association between distinct types of narcissism and daily experiences warrants consideration.

The current study draws on the number of social encounters throughout the day, but did not investigate how encounters with different types of social partners (e.g., close family members, friends, acquaintances) are associated with narcissism. However, narcissistic people may have a greater interest in acquaintances and less close friends or relatives, as less close social partners may be more affirming than close social partners who know them well and thus be a better audience for narcissistic people's self-promoting behaviors (Carlson et al., 2011). Further, encountering different social partners may elicit various emotional experiences (Ng et al., 2019). As such, future studies may consider the distinction between closeness of social partners.

Quality of relationships also may contribute to the associations between narcissism, encounters with social partners, and emotions. For example, previous studies suggest narcissistic people use more offensive language with their social partners (Adam et al., 2014) which may cost their social relationship quality. Therefore, it may be worthwhile to examine how narcissism influences the quality of social encounters.

Overall, utilizing older adult's daily social and emotional experiences information, this study extends the literature by showing how narcissism shapes individual's emotions in late life. The findings regarding social encounters, pride, and loneliness highlight the crucial role social contact plays in benefiting older people's emotional well-being.

Appendix

NARCISSISTIC PERSONALITY INVENTORY

Instructions

Please read each pair of statements below and place an “X” by the one that comes closest to describing your feelings and beliefs about yourself. You may feel that neither statement describes you well, but pick the one that comes closest. Please complete all pairs.

Items

1. I really like to be the center of attention.

   It makes me uncomfortable to be the center of attention.

2. I am no better or no worse than most people.

   I think I am a special person.

3. Everybody likes to hear my stories.

   Sometimes I tell good stories.

4. I usually get the respect I deserve.

   I insist upon getting the respect that is due to me.

5. I don't mind following orders.

   I like having authority over people.

6. I am going to be a great person.

   I hope I am going to be successful.

7. People sometimes believe what I tell them.

   I can make anybody believe anything I want them to.

8. I expect a great deal from other people.

I like to do things for other people.

9. I like to be the center of attention.

I prefer to blend in with the crowd.

10. I am much like everybody else.

I am an extraordinary person.

11. I always know what I am doing.

Sometimes I am not sure of what I am doing.

12. I don't like it when I find myself manipulating people.

I find it easy to manipulate people.

13. Being an authority doesn't mean that much to me.

People always seem to recognize my authority.

14. I know that I am good because everybody keeps telling me so.

When people compliment me I sometimes get embarrassed.

15. I try not to be a show off.

I am apt to show off if I get the chance.

16. I am more capable than other people.

There is a lot that I can learn from other people.

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Table 1: Sample Descriptive Information

	Participants (N = 304)		
	M	*SD*	*Range*
Demographic Characteristics			
Age	73.88	6.32	65–89
Self-rated health [a]	3.60	1.00	1–5
Social network size [b]	15.26	6.97	0–30
Narcissism [c]	0.20	0.17	0–0.75
		Proportions	
Female		.56	
Married		.59	
Minority		.29	
Education			
High school or less		.14	
Some college		.28	
College or more		.58	
Experiences Throughout the Day [d]			
Emotional experiences [e]			
Proud	2.43	1.19	1–5
Lonely	1.16	0.35	1–3.83
Irritated	1.26	0.32	1–2.64
Positive emotion scale [f]	3.45	0.71	1–5
Negative emotion scale [g]	1.23	0.29	1–2.45
Social encounters at each assessment [h]	2.84	1.38	0–13.35

Note. [a] 1(*poor*), 2 (*fair*), 3 (*good*), 4 (*very good*), and 5 (*excellent*). [b] Number of social partners named as social convoy. [c] Proportion of narcissism-consistent responses. [d] Reported every 3 hours, assessment n = 5,993. [e] 1 (*not at all*) to 5 (*a great deal*). [f] Mean of four items (proud, content, loved, calm). [g] Mean of five items (nervous/worried, irritated, bored, lonely, sad). [h] Average number of social partners encountered in the prior 3 hours.

Table 2: Multilevel Models for Narcissism Score Predicting Emotional Experiences Throughout the Day

	Pride [a]		Loneliness [a]		Irritation [a]	
	B	*SE*	*B*	*SE*	*B*	*SE*
Fixed effects						
Intercept	2.20***	0.22	1.23***	0.07	1.22***	0.06
Narcissism [b]	1.01*	0.40	0.07	0.12	0.14	0.11
Covariates						
Male	0.10	0.15	0.14**	0.05	-0.09*	0.04
Age	-0.00	0.01	0.00	0.00	-0.00	0.00
Married	-0.04	0.15	-0.12*	0.05	0.05	0.04
Racial/ethnic minority	0.77***	0.16	-0.01	0.05	-0.06	0.04
Health [c]	0.07	0.07	-0.04	0.02	-0.07***	0.02
High school or less	(REF.)		(REF.)		(REF.)	
Some college	-0.00	0.22	-0.08	0.07	0.01	0.06
College or more	-0.38	0.22	-0.08	0.07	0.07	0.06
Social network size [d]	0.02*	0.01	-0.00	0.00	-0.01***	0.00
Random effects						
Intercept VAR	1.21*	0.10	0.11***	0.01	0.08***	0.01
Residual VAR	0.47***	0.01	0.11***	0.00	0.24***	0.00
-2 log likelihood	13712.57		4672.42		9234.50	

Note. Participants $n = 304$. Assessments $n = 6010$. All continuous predictors centered at the grand mean.

[a] 1 (*not at all*) to 5(*a great deal*). [b] Proportion of narcissism-consistent responses. [c] 1(*poor*) to 5 (*excellent*). [d] Number of social partners named as social convoy.

*$p < .05$. **$p < .01$. ***$p < .001$.

Table 3: Multilevel Models for Narcissism Score Predicting Number of Social Encounters at Each Assessment

	B	*SE*
Fixed effects		
Intercept	2.36***	0.22
Narcissism [a]	0.85	0.56
Covariates		
Male	-0.53***	0.16
Age	-0.00	0.01
Married	0.59***	0.15
Racial/ethnic minority	0.75***	0.16
Health [b]	0.04	0.07
High school or less	(REF.)	
Some college	-0.20	0.21
College or more	0.04	0.21
Social network size [c]	0.02*	0.01
Random effects		
Intercept VAR	0.93	0.21
Predictor VAR	22.52***	7.37
Covariance	-2.43*	1.36
Residual VAR	4.36***	0.08
-2 log likelihood	26817.12	

Note. Participants $n = 304$. Assessments $n = 6089$. All continuous predictors centered at the grand mean.

[a] Proportion of narcissism-consistent responses. [b] 1(*poor*) to 5 (*excellent*). [c] Number of social partners named as social convoy.

*$p < .05$. **$p < .01$. ***$p < .001$.

Table 4: Multilevel Structural Equation Mediating Models (MSEM) Predicting Direct and Indirect Effects of Narcissism

	Pride [a]		Loneliness [a]		Irritation [a]	
	B	*SE*	*B*	*SE*	*B*	*SE*
Fixed effects						
Intercept	2.49**	0.94	1.10***	0.23	1.27***	0.24
Direct effects on outcome						
Narcissism [b]	0.95*	0.42	0.07	0.12	0.10	0.11
Social encounters (between-person) [c]	0.06	0.08	0.02	0.03	0.05	0.02
Social encounters (within-person) [c]	0.04***	0.01	-0.01**	0.00	0.00	0.00
Direct effects on mediator						
Narcissism [b]	0.76	0.58	0.76	0.58	0.76	0.58
Indirect effect on outcome						
Narcissism [b]	0.04	0.05	0.02	0.03	0.04	0.04
Random effects						
Intercept VAR	0.03***	0.00	0.03***	0.00	0.03***	0.00
Residual VAR (social encounter)	1.36***	0.37	1.36***	0.37	1.36***	0.37
Residual VAR (outcome)	1.22***	0.09	0.11***	0.03	0.08***	0.01

Note. Participants $n = 304$. Assessments $n = 6010$. All models adjusted for between-person (level 2) effects of covariates. All continuous predictors centered at the grand mean.

[a] 1 (*not at all*) to 5(*a great deal*). [b] Proportion of narcissism-consistent responses. [c] Number of encountered social partners in the prior 3 hours.

*$p < .05$. **$p < .01$. ***$p < .001$.

Supplementary Table 1: Background Information for Eligible and Excluded Participants

	Eligible participants (n = 304)			Excluded participants [a] (n = 29)			
	M	*SD*	*Range*	*M*	*SD*	*Range*	*t*
Age	73.88	6.32	65–89	76.97	8.42	65–92	-1.92
Self-rated health [b]	3.60	1.00	1–5	2.97	1.05	1–5	3.23**
Social network size [c]	15.26	6.97	0–30	12.59	6.21	5–26	1.99*
Narcissism [d]	0.20	0.17	0–0.75	0.27	0.27	0–0.94	-1.18
			Proportions				χ^2
Female		.56			.45		1.24
Married		.59			.55		0.18
Minority		.29			.69		18.94***
Education [e]							4.43
High school or less		.14			.24		
Some college		.28			.38		
College or more		.58			.38		

Note. [a] Excluded due to incomplete data on narcissism score and/or the daily assessments. [b] 1(*poor*), 2 (*fair*), 3 (*good*), 4 (*very good*), and 5 (*excellent*). [c] Number of social partners named as social convoy. [d] Proportion of narcissism-consistent responses. *n*=18 excluded participants completed the measure of narcissism. [e] 1(*high school or less*), 2 (*some college*), and 3*(college or more)*.
*p < .05. **p < .01. ***p < .001.

Supplementary Table 2: Bivariate Associations between Narcissism, Social Encounters, Emotional Experiences, and Covariates

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Narcissism [a]	–													
2. Pride [b]	.12	–												
3. Loneliness [b]	.03	-.02	–											
4. Irritation [b]	.04	-.08	.41	–										
5. Social encounters [c]	.06	.14	-.16	.16	–									
6. Age	-.15	-.10	.06	-.03	-.10	–								
7. Health [d]	.16	-.02	-.13	-.20	-.04	-.03	–							
8. Social network [e]	.02	.09	-.16	-.18	.13	-.14	.19	–						
9. Male	.19	.00	.14	-.04	-.08	.01	.04	-.24	–					
10. Married	.08	.01	-.10	.03	.15	-.21	.02	.06	.41*	–				
11. Minority	-.08	.30	.05	-.01	.24	-.15	-.32	-.11	.01	.00	–			
12. High school or less	-.09	.12	.11	.02	.12	.07	-.25	-.16	-.15*	-.16*	.32*	–		
13. Some college	-.11	.10	-.03	-.04	-.10	-.02	-.10	-.04	-.11	-.04	.06	-.25	–	
14. College or more	.17	-.17	-.05	.02	.00	-.04	.27	.14	.20*	.15*	-.28*	-.47*	-.73*	–

Note. [a] Proportion of narcissism-consistent responses. [b] Average score of emotional experiences in the prior 3 hours rated from 1 (*not at all*) to 5(*a great deal*). [c] Average number of encountered social partners in the prior 3 hours. [d] 1(*poor*), 2 (*fair*), 3 (*good*), 4 (*very good*), and 5 (*excellent*). [e] Number of social partners named as social convoy.
*$p < .05$. **$p < .01$. ***$p < .001$

Supplementary Table 3: Multilevel Models for Narcissism Score Predicting Number of Social Encounters (Encounters with Spouse Excluded)

	B	*SE*
Fixed effects		
Intercept	2.39***	0.21
Narcissism [a]	0.82	0.55
Covariates		
Male	-0.58***	0.16
Age	-0.01	0.01
Married	-0.23	0.15
Racial/ethnic minority	0.76***	0.16
Health [b]	0.04	0.07
High school or less	(REF.)	
Some college	-0.19	0.21
College or more	0.01	0.21
Social network size [c]	0.03*	0.01
Random effects		
Intercept VAR	0.90	0.20
Predictor VAR	21.56***	7.24
Covariance	-2.28*	1.34
Residual VAR	4.33***	0.08
-2 log likelihood	26765.46	

Note. Participants $n = 304$. Assessments $n = 6089$. All continuous predictors centered at the grand mean.

[a] Proportion of narcissism-consistent responses. [b] 1(*poor*) to 5 (*excellent*). [c] Number of social partners named as social convoy.

*$p < .05$. **$p < .01$. ***$p < .001$.

Supplementary Table 4: Multilevel Models for Narcissism Score Predicting Positive and Negative Mood

	Positive mood [a]		Negative mood [b]	
	B	*SE*	*B*	*SE*
Fixed effects				
Intercept	3.27***	0.13	1.24***	0.05
Narcissism [c]	0.26	0.24	0.19	0.10
Covariates				
Male	-0.02	0.09	0.00	0.04
Age	-0.00	0.01	-0.00	0.00
Married	0.17	0.09	-0.01	0.04
Racial/ethnic minority	0.14	0.10	-0.04	0.04
Health [d]	0.09*	0.04	-0.07***	0.02
High school or less	(REF.)		(REF.)	
Some college	0.15	0.13	-0.06	0.05
College or more	-0.08	0.13	-0.02	0.05
Social network size [e]	0.02***	0.01	-0.01*	0.00
Random effects				
Intercept VAR	0.45***	0.04	0.07***	0.01
Residual VAR	0.17***	0.00	0.06***	0.00
-2 log likelihood	7530.64		1299.32	

Note. Participants $n = 304$. Assessments $n = 6089$. All continuous predictors centered at the grand mean.

[a] Mean of four items (proud, content, loved, calm) rated from a (*not at all*) to 5 (*a great deal*). [b] Mean of five items (nervous/worried, irritated, bored, lonely, sad) rated from a (*not at all*) to 5 (*a great deal*). [c] Proportion of narcissism-consistent responses. [d] 1(*poor*) to 5 (*excellent*). [e] Number of social partners named as social convoy.

*$p < .05$. **$p < .01$. ***$p < .001$.

Figure 1: Conceptual Framework of the Mediation Model

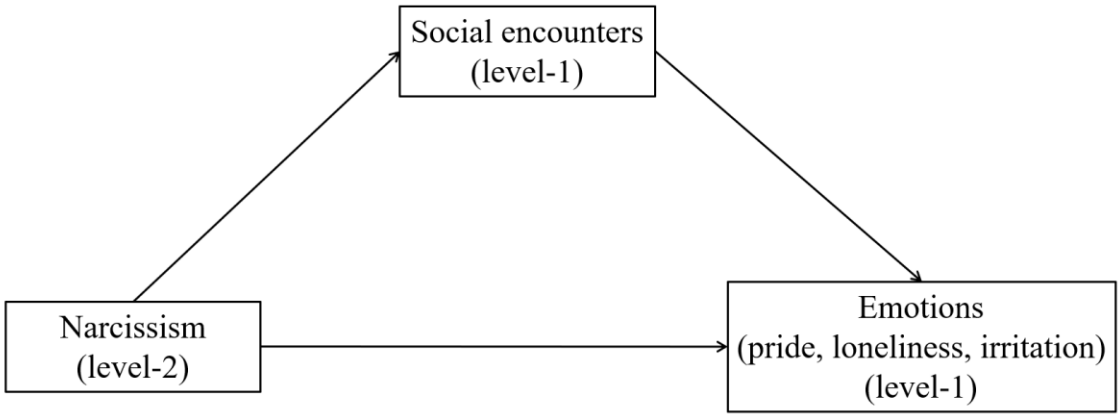

Figure 2. Multilevel Structural Equation Mediating Models (MSEM) Predicting Direct and Indirect Effects of Narcissism on Pride